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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,936	03/25/2005	Ayrookaran J. Poulose	GC717-2-US	1489

5100 7590 08/19/2008

GENENCOR INTERNATIONAL, INC.
ATTENTION: LEGAL DEPARTMENT
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EXAMINER	
MOORE, WILLIAM W	
ART UNIT	PAPER NUMBER
1656	
MAIL DATE	DELIVERY MODE
08/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,936	POULOSE, AYROOKARAN J.	
	Examiner	Art Unit	
	WILLIAM W. MOORE	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 15-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 15-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *See Continuation Sheet*.

Continuation of Attachment(s) 6). Other: the Terminal Disclaimer filed 12 May 2008 is APPROVED.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 May 2008 has been entered. In particular, Applicant's Terminal Disclaimer filed 21 May 2008 is APPROVED, overcoming the rejection of record of claim herein for obviousness-type double patenting. Applicant's amendments to the paragraph beginning at line 14 of page 19 of the specification and to the last line of text, the footnote, at page 30 of the specification overcome the objection of record to the specification. In view of Applicant's amendments and the teachings of the prior art of record herein, the rejections of record of claims 2 and 3 herein under the first paragraph of 35 U.S.C. § 112 are WITHDRAWN.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 5-16 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while enabling for use of proteases with one or more amino acid substitutions in the amino acid sequence set forth in SEQ ID NO:6, as numbered according to the amino acid sequence set forth in SEQ ID NO:2, does not reasonably provide enablement for use of polypeptides lacking particular function and significant structural relationship to SEQ ID NO:6. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Claims 1-3 and 5-16 contemplate preparation and use of polypeptides wherein, except for two positions recited in claim 1, arbitrary amino acid substitutions, additions or deletions occur in non-specific polypeptides that might be aligned with the amino acid sequence of SEQ ID NO:2. While the specification teaches how to use proteases with one or more amino acid substitutions in the amino acid sequence set forth in SEQ ID NO:6, it fails to teach the artisan how to use the very great number of heterofunctional, or non-functional, polypeptides that fall within the broad scope afforded by the negligible structural requirements of claim 1. It is well settled that 35 U.S.C. § 112, first paragraph, requires that a disclosure be sufficiently enabling to allow one of skill in the art to practice the invention as claimed without undue experimentation and that unpredictability in an attempt to practice a claimed invention is a significant factor supporting a rejection under 35 U.S.C. §112, first paragraph, for non-enablement. See, *In re Wands*, 8

USPQ2d 1400, 1404 (Fed. Cir. 1988) (discussing factors relevant to analysis of enablement). Applying the factors discussed in *Wands* to Applicant's disclosure, it is apparent that:

a) the specification lacks adequate, specific, guidance for using the great number of generic polypeptides having but the slightest relationship to either SEQ ID NO:6 or SEQ ID NO:2,

b) the specification lacks working examples wherein any of the great number of generic polypeptides having but the slightest relationship to either SEQ ID NO:6 or SEQ ID NO:2 are used for any purpose,

c) in view of the prior art publications of record herein, the state of the art and level of skill in the art do not support such use.

Thus the use of a molecule that is "variant" of a "protease", but is not required by the claims to have proteolytic activity, is unsupported by the present specification even if taken in combination with teachings available in the prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(f) he did not himself invent the subject matter sought to be patented.

Claims 1-3 and 5-16 remain rejected, essentially for reasons of record, under 35 U.S.C. § 102(e) as being unpatentable over Estell et al., US 7,332,320.

Applicant's arguments in the Response of 21 May 2008 have been fully considered but are not persuasive. Applicant suggests that the claim amendment inserting the designation "GG36" before the term "protease variant" in each of claims 1-3, 15 and 18 might remove the disclosure of Estell et al., previously cited as US 2005/0148059, as prior art to an invention claimed herein. Yet the claim amendments require no particular degree of structural relationship to the amino acid sequence set forth in SEQ ID NO:6, only that two positions intended for substitution be identifiable by correspondence with the amino acid sequence set forth in SEQ ID NO:2. Indeed, Estell et al. disclose that their protease variants comprise chimeric subtilisins wherein a region of the amino acid sequence of a mature subtilisin variant may be the amino acid sequence of the GG36 subtilisin, wherein a valine is present at position 26, just as a valine is present in a similar peptide region at the corresponding position 26 in the amino acid sequence of subtilisin BPN', and wherein an asparagine is present at position 212, just as an asparagine is present in a similar peptide region at the corresponding position 218 in the amino acid sequence of subtilisin BPN'. See e.g., col. 9, lines 42-50, the paragraph spanning cols. 9 and 10, vol. 10 lines 16-59, the paragraph spanning cols. 11 and 12, and, particularly, the first full paragraph of

col. 12. Note also, that Estell et al. consider that epitope regions in other subtilisins may "correspond" to those in subtilisin BPN', such as, col. 16, at lines 3-5, "corresponding to residues 25-39". Clearly, Estell et al. disclose generic subtilisin variants, including GG36 subtilisin variants, comprising immunogenicity reducing substitutions, including V26S and V26T, as well as the thermal stability-conferring N212S/N218S substitution. See the paragraph spanning cols. 51 and 52. Because the claim amendments fail to differentiate a claimed subtilisin variant from a subtilisin variant disclosed by Estell et al., the rejection of record is maintained.

Claims 1-3 and 15-18 remain rejected, essentially for reasons of record under 35 U.S.C. § 102(f) because the claimed invention was made by another who was the first inventor of the claimed subject matter.

Applicant's arguments in the Response of 21 May 2008 have been fully considered but are not persuasive. Applicant suggests that the claim amendment inserting the designation "GG36" before the term "protease variant" in each of claims 1-3, 15 and 18 might establish that Estell et al. '320 are not first inventors of an invention claimed herein. As noted in the communication mailed 29 October 2007, the seventeen-page priority document claimed for the present application, US provisional application serial No. 60/350,221 filed 16 January 2002, fails to disclose the particular substituents required in a subtilisin variant of claim 1 herein, whether a V26S or V26T substitution or a stabilizing N218S substitution, DNAs encoding such particularly-substituted variants, vectors and host cells comprising such DNAs, or compositions comprising these particular protease variants, and also fails to disclose any particular protease variants that satisfy the limitations of claim 2 or 3. Estell et al. '320, however, disclose subtilisin variants that comprise these substitutions and meet the incomplete structural requirements of the presently-amended claims. Thus the rejection of record is sustained.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William W. Moore whose telephone number is 571.272.0933 and whose FAX number is 571.273.0933. The examiner can normally be reached Monday through Friday between 9:00AM and 5:30PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisory Primary Examiner, Dr. Kathleen Kerr Bragdon, can be

reached at 571.272.0931. The official FAX number for all communications for the organization where this application or proceeding is assigned is 571.273.8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571.272.1600.

/Kathleen Kerr Bragdon/
Kathleen Kerr Bragdon, Ph.D.
Supervisory Primary Examiner
Art Unit 1656

/William W. Moore/
29 July 2008